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ABSTRACT

This paper presents an overview of the literature on mother-infant attachment behavior. Attachment is defined by Ainsworth as involving affection, discrimination, observable behavior, active participation by both parties, and reciprocal response. The process of attachment is seen by Stone, Smith, and Murphy as taking place in three stages over the first year of the infant's life. In the first stage the baby is "addicted" to social objects. In the second stage the infant distinguishes its mother from others and responds to her selectively. In the third stage the child realizes that the mother is different and develops stranger anxiety. Recent investigations on the maternal component of attachment indicate that there is a period shortly after birth that is most important to mother-to-infant attachment. This critical period has been observed in animals. Common maternal behavior in postnatal contact has been observed in humans. Bowlby has posited that the instinctual responses of infants evoke maternal behaviors in the mother. Ainsworth identified patterns of behavior in infants which seemed to mediate attachment. Harlow's research with infant rhesus monkeys supported the importance of social and emotional contact. The post partum separation of mothers and infants in hospitals that began in the United States at the turn of the century has become the subject of recent studies. The effects of separation on the mother have been measured in terms of behavioral responsiveness to the infant during an interaction event, such as nursing. Implications of this research into the importance of post partum interaction are discussed. (Author/SB)

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MATERNAL ATTACHMENT TO INFANTS DURING THE POSTNATAL PERIOD

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We have spent decades in child psychology looking at children as they grow and formulating the process of their interaction with family and peers. The movement of developmental and experimental psychologists has been to lower the age at which the child is considered competent to participate in such interaction. The voluminous research on infancy in the past twenty years focuses on the importance of the child's first two years of life and is highlighted by White's (1976) recent studies of environmental and parental factors which can enhance this period of development. Increasing attention has also been focused on the child's first relationship to another person. This phenomena is called the attachment or bonding process. In order to examine the earliest aspects of this relationship we are drawn to the hospital setting where the first contact between mother and child normally takes place. My research, for example, was conducted at the Newborn Nursery, University Hospital, Oklahoma Health Sciences Center.

The focus of this presentation will be an overview of the literature that examines this attachment or bonding process. According to Ainsworth attachment implies affection, discrimination, observable

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behavior, active participation by both parties and reciprocal response. Attachment is a two-way process. It involves interaction. Kennell defines attachment as a unique emotional relationship between two individuals which is specific and endures through time. How this attachment process takes place appears to greatly effect the subsequent personality and cognitive development of the child. Research has generally focused upon the child component of the attachment process. During the past forty years Bowlby and Spitz have elaborated in great detail the process by which the human infant becomes attached to its mother. Stone, Smith and Murphy offer the most encompassing review of the infant attachment research to date and present a schema for the development of infant attachment. According to these authors attachment takes place in three stages over the first year of the infant's life. In the first stage the baby is "addicted" to social objects -- possibly for no other reason than they are perceptually and cognitively the most interesting and dependably responsive ones in the infant's world. The early indicators of attachment are generally considered to be visual following and concentration on the human face, especially the eyes, special alerting to the human voice and social smiling (Wolf, 1963; Robson, 1967; Moss & Robson, 1968; Robson, Pedersen & Moss, 1969; Bowlby, 1969; Dewey, 1935; Gerwitz, 1965; Ambrose, 1961; Brackbill, 1958; Spitz & Wolf, 1946; Emde & Harmon, 1972; Hunt & Uzgiris, 1964; and Kagan, 1970). The second stage of infant attachment occurs during the second trimester of the

first year. As the infant distinguishes others from mother she remains, as a rule, the most responsive, as well as the source of varied and multiple pleasures. All evidence from investigators suggests that about three months of age the infant is selectively responsive to mother (Sears, Maccoby & Levin, 1957; Bell, 1968, 1971; Fries, 1944; Harper, 1971; Prectl, 1963; Richards, 1971; Brody, 1956; Ainsworth, 1969; and Ainsworth & Bell, 1969). The third period of attachment in the infant takes place during the last third of the first year when the realization occurs that mother is different and stranger anxiety develops. Mother is used as a "safe base" from which the infant gains emotional refueling (Rheingold, 1969; Stevens, 1971; Ainsworth, 1963; and Schaffer & Emmerson, 1964).

Investigators have only recently begun to focus upon the maternal component of the attachment process. There has been no definitive statement regarding the procedure by which the human mother becomes attached to her infant. Several theorists have focused on the developmental significance of the birth process. It is in pregnancy that the affectional bonds between the infant and mother are initiated. According to Bibring (1961) the maturational goal of motherhood is the establishment by a woman of a special relationship to her child in which she is able to view the child as part of herself, and at the same time part of the outside world and part of her sexual mate. Bibring's study suggests this integration occurs later and more gradually than expected. It does not come to completion with the arrival of the baby, but rather

evolves slowly, in reciprocity with the child's development and with the growth of the family as an independent social unit.

Recent investigations indicate there is a period shortly after birth that is uniquely important for mother-to-infant attachment in human beings (Klaus & Kennell, 1970, 1972; Barnett, Leiderman & Grobstein, 1970; Salk, 1970, 1973). Such a "critical or sensitive period" has long been known in animal studies (Hersher, Richmond & Moore, 1963; Klopfer, Adams & Klopfer, 1964; Moore, 1968). Characteristic and species-specific maternal behavior such as nesting, retrieving, grooming and exploring have been observed in nonmammalian mothers immediately after delivery (Rheingold, 1963). If the animal mother is separated from her young during this period for as short a time as one to four hours deviant mothering behavior, such as failure of the mother to care for her young, often results. According to Caldwell (1962) the critical period hypothesis is a useful measure in determining the development and maturation of the mother/infant bonding process. The following questions are raised by such a hypothesis:

1) Are there periods during which the human mother is maximally sensitive to the social contacts with its infant, and during which affectional bonds are most easily cemented?

2) In the absence of mother-infant contact during the sensitive period, can a durable mother-infant attachment be made?

It is important to remember the identification of critical periods has come from nonmammalian data and translation of this concept to comparable periods in the human infant must be very guarded (Soumi, 1976). Klaus and Kennell (1972) have observed behavior common to mothers at the first

postnatal contact with their unclothed infants as they establish affectional ties. This behavior involves an orderly, progressive transaction by the mother with the infant, such as seeking eye contact, touching (first with fingertips on the infant's extremities followed by palm encompassing contact of the trunk), along with smiling and vocalization. This "species-specific" behavior common to human females is interesting in view of the acknowledged diversity of factors which provide her inheritance for a mother role, such as her native endowment, culture and long history of interpersonal relationships within her own family.

Such "species-specific" behavior in humans is intuituvely related to animal studies by Bowlby's ethological theory of attachment. Bowlby (1958) theorized that in the early life of the human infant there matures a complex array of instinctual responses, the function of which is to insure he obtains parental care sufficient for his survival. Thus Bowlby proposed that the nature of a child's tie to his mother is a psychological attachment and although this is related to physiological satisfactions, the two are fundamentally different phenomena. Bowlby posed that five instinctual responses in the infant (crying, smiling, sucking, clinging and following) evoke maternal behavior in the mother. Bowlby clearly indicated there may be more. Both Ainsworth (1964) and Robson (1967) have added variables to Bowlby's five behaviors. Ainsworth identified thirteen patterns of behavior in infants from eight to twenty weeks of age which seemed to mediate the attachment of the infant to his mother and soon afterwards to other favorite figures, and considered the

catalogue of behaviors incomplete. Robson (1967) added the variable of eye-to-eye contact, which is cited by Wolff (1963) as occuring by the fourth week of life. More recent studies (Goren, Sarty & Wu, 1975) demonstrate visual proficiency in newborn infants, nine minutes of age. Bowlby also felt preeminence should not be given to any of these five instinctive behaviors, especially sucking and feeding. Subsequently he grouped the specific forms of behavior making for attachment into two main classes:

i. signalling behavior, the effect of which is to bring mother to the child;
ii. approach behavior, the effect of which is to bring child to mother.

Note here the emphasis is on specific maternal behavior as well as specific child behavior.

Bowlby's ethological viewpoint gathered dramatic support through Harlow's early studies (1958) with the infant rhesus at the University of Wisconsin. Harlow demonstrated that contact comfort is an important basic affectional variable. Further he found contact overshadowed the nursing variable to the extent that suggested nursing primarily insures frequent and intimate body contact of the infant with the mother. Harlow's research brought the emotional and social development of the human infant out of the field of theoretical and clinical inference. It is now widely agreed that babies do not love their mothers because they feed them (Stone, Smith & Murphy, 1973).

Given the above theoretical positions and research findings one wonders why investigators are only now focusing on this early attachment

in humans. There are two factors which have obscured consideration of the post partum period as a critical time for attachment of the mother to her infant. One has been the notion that the newborn as an organism is undeveloped and has limited perceptual and sensory capacities. Only in the past decade with the advance of physiological instrumentation has there been a dramatic spurt of interest in infant studies. The results of these investigations increasingly reveal the infant to be complexly organized and perceptually sensitive and thus capable of participating (responding and eliciting responses) in interaction with the mother in the newborn period. The other factor is that interest in the postnatal period is hampered by present hospital practices. In almost all American or Western hospitals mothers are separated from their full term infant for a short and possibly critical time. When the infant is ill or premature, separation is usually complete. Care is provided in another division of the hospital or even another building. In the vast majority of nurseries, although the mother may come to see her premature baby, she is denied the opportunity to touch or care for him until he is large enough to go home.

Separate hospital care facilities for mother and infant following delivery are not universal. According to Strong (1949) European hospitals as well as those in Japan and China, have always had the rooming-in plan. Dr. Clifford Barnett, an anthropologist, notes there is no precedent for separation of infant and mother following birth (Klaus & Kennell, 1970). Dr. Barnett searched for variations in the Human Relations File

which lists 220 cultures and found in most cultures the mother and infant are secluded together and the mother has little or no responsibilities other than the infant during the three to seven days while the navel heals. The separation of mother and infant in Western hospitals did not occur until about the turn of the century. At that time both the advance of specialized medicine in the areas of maternal and infant care and the effort to reduce mortality rate in infants and mothers in hospitals through separate care facilities are seen as contributing factors to the current emphasis on individual rather than integrated care of the infant-mother dyad in American hospitals. Along with this came an effort of organization and licensing of health care services which did not include midwifery. Consequently many more mothers without medical problems in pregnancy were channeled into hospital care facilities.

Preliminary investigators have looked at only one aspect of the maternal attachment process (Salk, 1960, 1962, 1973; Klaus & Kennell, 1970, 1972, 1975). This has been the amount of contact (or separation) between mother and infant in the post partum period. These studies have included both premature and full term infants and, possibly because most babies are delivered in hospitals, have been studies conducted by physicians rather than psychologists. The effects of separation of the infant on the mother are usually measured in terms of the behavioral responsiveness of the mother to the infant in an interaction event, such as nursing. Behavioral data is compiled from film clips of videotape recordings of the mother/infant interaction.

My research focused on measurement of the responsiveness of the primagravida mother (the mother who faces childbirth for the first time) to her full term infant under two conditions: (1) additional contact with her infant over routine hospital procedure during the hospital confinement period of the mother and (2) additional information received by the mother over routine hospital procedure about the general sensory capabilities of the neonate. Information is considered an important dimension of the maternal attachment process because a vast amount of infant research in the past twenty years disputes previously accepted notions that the newborn infant is perceptually unable to respond at an interpersonal level. The criteria for measuring maternal responsiveness to contact and information was multidimensional. First, the behavioral responsiveness of the mother was measured in a video-taped procedure. Secondly, the attitude of the mother was measured in her response to questions oriented toward her (1) competency; (2) knowledge of child rearing; (3) feelings toward her infant and (4) concern about the illness of her infant. These questions were based on Morris' investigation (1966) of the characteristic attitudes of mothers of battered children.

Investigation of the maternal component of the mother-infant attachment or bonding process is in its "salad days". Confirmation of the post partum period as a critical or sensitive time for the psychological development of both the infant and mother could have far-reaching multidisciplinary implications including cultural,

theoretical for the ethologists, animal research and hospital practices. The latter would involve taking a more comprehensive medical approach to maternal and child care, conceptualization of a more assertive role of mother and child during the confinement period and the inclusion of a psychologist on the neonatal team. Psychologists have been focusing their efforts much earlier in the life cycle of the child. With a greater understanding of the importance of these first few days on the formation of human relationships we may be able to more adequately focus our attention on prevention and the establisnment of sound attachments between parents and their newborn offspring.